इंटरनेट मानक

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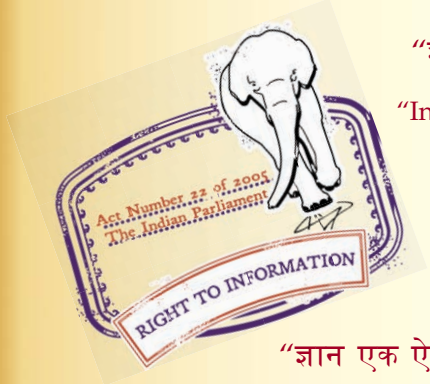
IS 12908 (1990): Ferroaluminium (Bi-lingual) [MTD 5: Ferro Alloys]



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"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
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"Knowledge is such a treasure which cannot be stolen"

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IS 12908 : 1990
(Reaffirmed 1999)

भारतीय मानक

फेरोऐल्युमिनियम — विशिष्टि

Indian Standard

FERROALUMINIUM — SPECIFICATION

यू डी सी/UDC 669·15·71·198

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भारतीय मानक ब्यूरो
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NEW DELHI 110002

सितम्बर/*September* 1990

मूल्य वर्ग/Price Group 1

प्राक्कथन

इस भारतीय मानक के मसौदे को लौह मिश्रधातु विषय समिति द्वारा अंतिम रूप देने और धातुकर्म इंजीनियरी विभाग परिषद् द्वारा अनुमोदन के बाद भारतीय मानक ब्यूरो द्वारा 19 जनवरी 1990 को ग्रहण किया गया ।

फेरोऐल्युमिनियम का उपयोग अनॉक्सीकृत और अर्ध अनॉक्सीकृत इस्पात बनाने के दौरान विऑक्सीकरण के बेहतर नियंत्रण के लिए किया जाता है। इसका उपयोग लौह और इस्पात बनाने के लिए मिश्रधातु के रूप में भी किया जाता है ।

इस मानक को तैयार करते समय इन्स्टीच्यूट एसपेनॉल दे नार्मेलाइजेसिऑन (स्पेन) द्वारा प्रकाशित "यू एन ई 35-083-85 फेरोऐल्युमिनियम" से सहायता ली गई है ।

यदि देखना हो कि इस मानक में किसी अपेक्षा विशेष का पालन किया गया है या नहीं, तो परीक्षण या विश्लेषण में अवलोकन या गणना द्वारा प्राप्त परिणाम के रूप में जो भी अन्तिम मान आया हो, उसे IS 2 : 1960 'संख्यात्मक मानों के पूर्णांकन सम्बन्धी नियम (पुनरीक्षित)' के अनुसार पूर्णांक में बदल लिया जाए । पूर्णांकित मानों में सार्थक स्थान उतने ही रखे जाएँ, जितने इस मानक में निर्दिष्ट मान में दिए गए हैं ।

इस मानक के पृष्ठ 2 पर हिन्दी-अँग्रेजी शब्दों की सूची दी गई है, ताकि इसके समझने में आसानी हो । इस मानक का अनुवाद ब्यूरो के हिन्दी विभाग द्वारा किया गया है ।

Ferroalloys Sectional Committee MTD 5

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards on 19 January 1990, after the draft finalized by the Ferroalloys Sectional Committee had been approved by the Metallurgical Engineering Divisional Council.

Ferroaluminium is used for better control of de-oxidation during the making of semi-killed and killed steels. It is also used for alloy additions for iron and steel making.

In the preparation of this standard, assistance has been derived from UNE 35-083-85 'Ferroaluminium' published by the Institute Espanol de Normalizacion (SPAIN).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

FERROALUMINIUM — SPECIFICATION

1 SCOPE

1.1 This standard covers the requirements of ferroaluminium used in ferrous industry.

2 REFERENCES

2.1 The following Indian Standards are necessary adjuncts to this standard:

IS No.	*Title*
1387 : 1967	General requirements for the supply of metallurgical materials (*first revision*)
1472 : 1977	Methods of sampling ferroalloys for determination of chemical composition (*first revision*)
1820 : 1979	Recommended shapes, sizes and mass of aluminium notched bars and ingots for remelting purposes (*first revision*)

3 TERMINOLOGY

3.0 For the purpose of this standard, the following definitions shall apply.

3.1 Cast (Melt)

The product of any of the following:

a) One furnace heat, or

b) One tap of continuous furnace, or

c) A number of furnace or crucible heats of similar composition mixed in a ladle or holding furnace and used for making a cast.

3.2 Constitution of Consignment

3.2.1 *Tapped Lot Method*

A consignment constituted by the tapped lot method consists of a ferroaluminium mass of one melt (or one part of a continuous tap).

3.2.2 *Graded Lot Method*

A consignment constituted by the graded lot method consists of a number of melts (or parts of continuous taps) of one ferroaluminium designation.

The ferroaluminium content of the melts (or parts of continuous taps) constituting the consignment shall not differ from each other by more than 3 percent.

3.2.3 *Blended Lot Method*

A consignment constituted by the blended lot method consists of a number of melts (or parts of continuous taps) of one ferroaluminium desiignation which have been crushed to a particle size less than 50 mm and thoroughly mixed.

The content of the main constituent of the melts (or parts of continuous taps) constituting the consignment may vary between the minimum and maximum limits specified for the appropriate ferroaluminium designation.

3.3 Ferroaluminium

A master alloy of iron and aluminium with a minimum aluminium content of 35·0 percent by mass and a maximum aluminium content of 50·0 percent by mass obtained by fusion.

4 GRADES

4.1 This standard covers two grades of ferroaluminium as per the designation given in Table 1.

Table 1 Chemical Composition of Ferroaluminium, Percent

(*Clauses* 4.1, 8.2.1, 8.2.2 *and* 8.2.3)

Sl No.	Grade Designation	Constituents, Percent						
		Al	C, *Max*	S, *Max*	P, *Max*	Si, *Max*	Mn, *Max*	Cu, *Max*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	FeAl 40	35·0-40·0	0·10	0·03	0·03	0·50	0·50	0·30
2	FeAl 50	45·0-50·0	0·50	0·03	0·03	0·60	0·60	0·50

5 CLASS

5.1 Depending on the size of the granules and ingots, ferroaluminium has been classified in four classes as given in Table 2.

6 PARTICULARS TO BE SPECIFIED WHILE ORDERING

6.1 For the benefit of the purchaser, particulars to be specified while ordering for the material to this specification shall be as follows:

a) Quantity of the material;
b) Constitution of consignment;
c) Name of the material;
d) Grade designation;
e) Size range;
f) Necessary requirements for analysis reports, packing, etc, as appropriate; and
g) Shelf life.

7 SUPPLY OF MATERIALS

7.1 General requirements relating to supply of the material to this specification shall be as laid down in IS 1387 : 1967.

8 REQUIREMENTS

8.1 Constitution of Consignment

Ferroaluminium shall be delivered in consignments constituted by one of the methods defined in **3.2**.

8.2 Chemical Composition

8.2.1 Each batch of the material shall conform to the requirements of the chemical composition specified in Table 1 and if so specified by the purchaser at the time of enquiry and order, shall supply a test certificate of chemical analysis of the sample of material for each melt.

8.2.2 If specified by the purchaser at the time of enquiry and order that each lump of the batch should conform to the chemical composition specified in Table 1, this shall be agreed to between the purchaser and the manufacturer.

NOTE — The material belonging to a melt which is out of specification, shall not be blended or mixed with the material of another melt.

8.2.3 The chemical composition given in Table 1 shows only the main constituents elcments and usual impurities. If the purchaser requires closer ranges for the main element contents and/or different limits for specified elements and/or non-specified elements, this shall be agreed to between the purchaser and the manufacturer.

8.2.4 The chemical composition of the material shall be determined by any established instrumental/chemical method. In case of dispute, the referee method shall be agreed to between the purchaser and the manufacturer till an Indian Standard is published.

9 SIZE

9.1 Unless otherwise specified, the material shall be supplied in lumps or as crushed and screened particles. The particle size ranges and tolerances shall be as given in Table 2. The undersize values shall be valid at the point of delivery to the purchaser.

Table 2 Particle Size

(*Clause* 5.1)

Form	Class	Size Range, mm	Oversize, Percent by Mass, *Max*	Undersize, Percent by Mass, *Max*
(1)	(2)	(3)	(4)	(5)
Ingot	1	250*	—	—
Granules	2	2-20	10	Nil
	3	2-50	10	Nil
	4	2-100	10	Nil

*The nominal dimensions of 250 mm ingot shall be as given in IS 1820 : 1979.

10 DENSITY

10.1 The density of the material shall be in the range of **5.5** to **6.1** g/cc.

11 EXTRANEOUS CONTAMINATIONS

11.1 The material shall be reasonably free from extraneous contaminations, namely, slag and non-metallic inclusions, etc.

12 SAMPLING

12.1 Each batch of the material shall be sampled in accordance with IS 1472 : 1977.

13 PACKING

13.1 The material shall be packed in suitable containers, in quantities as mutually agreed to between the supplier and the purchaser.

14 MARKING

14.1 The container shall be marked with the following:

a) Supplier's name or trade-mark;
b) Grade number and class;
c) Quantity;
d) Date of manufacture; and
e) Shelf life, if required.

मानक मुहर

टिप्पणी — मानक मुहर का उपयोग भारतीय मानक ब्यूरो अधिनियम 1986 के प्रावधानों और उनके अधीन बने नियमों और विनियमों के अनुसार होता है । किसी भारतीय मानक से संबंधित उत्पाद पर इस मुहर का लगा होना इस बात का आश्वासन है कि उस वस्तु के बनाने में उस मानक में दी गई अपेक्षाओं का पालन किया गया है और उत्पादन के दौरान उसका निरीक्षण, परीक्षण और गुणता नियंत्रण उस सुनिश्चित प्रणाली के अनुसार हुआ है, जिसका निर्धारण और पर्यवेक्षण तो भारतीय मानक ब्यूरो द्वारा होता है परन्तु क्रियान्वयन उत्पादक द्वारा । इस प्रणाली में बचाव की एक और बात यह है कि जिन उत्पादों पर यह मानक मुहर अंकित की जाती है भारतीय मानक ब्यूरो उन उत्पादों की लगातार जांच पड़ताल करके यह मालूम करता रहता है कि वह उत्पाद संबद्ध मानक के अनुरूप हैं अथवा नहीं । निर्माताओं तथा संस्कर्ताओं को जिन शर्तों के अधीन मानक मुहर लगाने के लिए लाइसेंस दिया जाता है उसका विवरण भारतीय मानक ब्यूरो से मिल सकता है ।

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.